

Name_____

Chemistry I: Gas Law Problems

Period_____ Date_____

Combined Gas Law Problems 2

SHOW ALL WORK for credit!!

1. What change in volume results if 60.0 mL of gas is cooled from 33.0 °C to 5.00 °C while pressure is held constant?
2. Given 300.0 mL of a gas at 17.0 °C. What is the new volume at 10.0 °C? Pressure remains constant.
3. A gas occupies 1.00 L at standard temperature and pressure. What is the volume at 333.0 °C and standard pressure?
4. At 27.00 °C a gas has a volume of 6.00 L and 1 atm. What will the volume be at 150.0 °C and 1 atm?
5. At 225.0 °C a gas has a volume of 400.0 mL. What is the volume of this gas at 127.0 °C? Pressure remains constant.
6. At 210.0 °C and 2 atm of pressure, a gas has a volume of 8.00 L. What is the volume of this gas at -23.0 °C and 2 atm?

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7. The temperature of a 4.00 L sample of gas is changed from 10.0 °C to 20.0 °C. What will be the new volume if pressure is constant?

8. Carbon dioxide is usually formed when gasoline is burned. If 30.0 L of CO₂ is produced at a temperature of 1.00 X10³ °C and allowed to reach room temperature (25.0 °C) without any pressure changes, what is the new volume of the carbon dioxide?

9. A 600.0 mL sample of nitrogen is warmed from 77.0 °C to 86.0 °C. Find its new volume when the pressure remains constant.

10. What volume change occurs to a 400.0 mL gas sample as the temperature increases from 22.0 °C to 30.0 °C and constant pressure?

11. A gas syringe contains 56.05 milliliters of a gas at 315.1 K. Determine the volume that the gas will occupy if the temperature is increased to 380.5 K and no change in pressure has occurred?